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The Effects of Cultural Difference on the Rating of ADHD* Symptoms: A Comparison between Chinese and British Teachers' Ratings

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The Effects of Cultural Difference on the Rating of ADHD* Symptoms: A Comparison between British and Chinese Teachers' Ratings

*Attention Deficit Hyperactivity Disorder

The observation of children's behaviour by teachers is a valuable source of information used to reveal behavioural issues in children. This study investigates the effect of culture difference on teachers' ratings of ADHD symptoms. Six animated cartoons representing six ADHD symptoms in a classroom setting were developed. In each cartoon, there are five characters portrayed as 6 to 7 year-old children without cultural or gender references. Chinese and British primary school teachers teaching 6 to 7-year-old children were asked to watch the cartoons and subsequently rate the behaviours of each character. In addition, every teacher was asked to rate 10 randomly selected children from their own class. Data analysis is in progress. It is hoped that a statistical comparison of ratings provided by teachers from different cultures will shed light on whether there are differences in teacher's ratings and whether these are due to perceived or actual behavioural difficulties.

Keywords: cultural; difference; ADHD; teacher rating; effects

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is the most common childhood-onset psychological disorder with high prevalence across the world (Woo & Keatinge, 2008). A meta-analysis of 97 studies found that the prevalence of ADHD is between 5.9% and 7.1% in children and adolescents (Willcutt, 2012). There is apparently significant variability in prevalence across the world, but this is possibly due to differences in the methodological characteristics of the studies and cultural differences. After reviewing extensive international records and publications since 1978, Polanczyk and colleagues (2007b) concluded that 5.29% of children are affected by this disorder across the world. This means that there are, on average, one or two children suffering from ADHD symptoms in every class, and every school is dealing with the issue of how to teach these

children and help them to attain the expected standard of achievement at school.

ADHD is associated with considerable impairment across a range of domains, such as academic underachievement, poor social relationships, school dropout, low self-esteem, depression, anxiety, delinquent behaviours, substance abuse and unemployment (Kuriyan et al., 2013; Nigg, 2013; Spencer, Biederman & Mick, 2007). Compared to the general population, a lower quality of life has been observed in individuals with ADHD (Agarwal, Goldenberg, Perry & Ishak, 2012; Danckaerts et al., 2010). Since ADHD symptoms can be diagnosed at an early age, in order to help affected children, a considerable amount of money has been invested in medical treatments, behavioural intervention, special educational needs support for ADHD children, and scientific research into ADHD. However, getting access to effective treatments for children with ADHD is dependent on an accurate diagnosis. In order to diagnose ADHD, two global diagnostic criteria: DSM-5[1] and ICD-10[2] are widely used. According to these criteria, ADHD is characterized by a cluster of behavioural symptoms. The diagnosis of ADHD must be carried out in two or more settings, such as school, home and clinic, to warrant a conclusion. Therefore, the diagnosis of a child with ADHD involves the child's home carers, school teachers and psychiatrists.

Despite the use of standardized criteria and procedures in diagnosing ADHD, the prevalence of ADHD was reported to range from 1% to 20% among school-age children across the world (Polanczyk, Salum, Sugaya, Caye & Rohde, 2015). Controversy has surrounded variation in prevalence estimates between different cultural settings. Some researchers posit that ADHD is a cultural construct disorder, and that cultural differences

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[1] The Diagnostic and Statistical Manual of Mental Disorder (5th ed)

[2] Classification of Mental and Behavioural Disorder: Clinical Descriptions and Diagnostic Guidelines (10th ed)

explain the variability of the prevalence worldwide (Brewis, Schmidt & Meyer, 2000). Other researchers argue that the cultural differences play a limited role in the variability, and that differences in the methodological characteristics of the studies explain most of the variability in the prevalence of ADHD (Polanczyk, De Lima, Horta, Biederman & Rohde, 2007b). However, Polanczyk et al. (2007b) also emphasised that their research cannot rule out the influence of cultural differences on ADHD diagnosis. Moreover, diagnosis relies heavily on subjective judgements from children's parents, teachers and psychologists. Although their subjective judgement is based on the standardized behavioural rating, the behaviours are more like categories of child misbehaviours. To what extent a behaviour is appropriate or inappropriate for parents, teachers and psychiatrists, depends on the context of the behaviour and observers' personal perceptions of the behaviour. Therefore, it is very important to understand the influence of personal perception and cultural differences on ADHD diagnosis.

Teacher Rating and Problems

As noted, teachers' judgements of children's symptoms are very important in the diagnosis process. First; compared to parents and psychiatrists, teachers see children in a more structured and more demanding setting than the domestic setting and interact with children for a long period of time. This gives teachers the opportunity to compare children's behaviours in a large cohort and in a wide range of settings. Second; teachers have professional training, and knowledge of childhood development, which helps them to be aware of dysfunctional behaviour in children. Therefore, teachers are well placed to differentiate children impaired by ADHD symptoms from normally functioning children.

However, teachers' ratings of ADHD symptoms may not be the most accurate way of judging a child's classroom behaviour. Jacobson (2002) claimed that the rating of a child's ADHD behaviours in a classroom context varies between teachers. The

inconsistency may be due to one or more of three reasons. First; the symptoms are only general descriptions without contextual details. This leaves room for teachers to interpret what behaviours fall into the ADHD categories, and the frequency of these behaviours. Teachers' standards of what behaviours are appropriate or inappropriate, and their level of tolerance for inappropriate behaviour varies significantly. Second; teachers may not treat all the children in the same way – they may inadvertently be influenced by gender, language, ethnicity or other variables. Some teachers are not able to apply behavioural standards equally to all children which can lower inter-rater agreement (Jacobson, 2002). Third; given different classroom settings and management styles, a behaviour can be problematic in one setting but not in another (Ho & Leung, 2002). Therefore, teachers' rating of ADHD symptoms based on children's behaviour in the classroom context is subject to several sources of potential bias.

Research Question

Cultural differences between British teachers and Chinese teachers might influence their judgement of ADHD symptoms. Evertson and Weinstein (2006) have found that teachers form, convey, and act on expectations through their own cultural educational experiences. Previous research has found that British teachers and Chinese teachers tend to rate ADHD symptoms differently. Alban-Metcalfe and colleagues (2002) asked teachers from mainland China and the UK to watch a video of a 9 year-old white Caucasian boy with ADHD and rate the child's behaviour according to the standard diagnostic criteria. They found that teachers in mainland China tended to rate the ADHD behaviours of the target child higher than teachers from the United Kingdom. Another similar study found that Chinese teachers rated subjects higher than the UK teachers on the symptoms of ''fidgety, 'excessive running and climbing', and 'having difficulty sustaining attention', whilst the UK teachers tended to rate subjects higher than the Chinese teachers on the symptoms of

‘excessive talking’, ’can’t wait and ‘interrupting others’ (Du, Yin, Ma & Li, 2003).

However, the rating targets of these research projects introduce a potential cultural bias. These studies used videos of white Caucasian children with ADHD in Western school settings as rating targets to determine rating differences. The behavioural contexts and language were not familiar to Chinese teachers. Moreover, in asking Chinese teachers to rate British children’s classroom behaviours according to their expectations and tolerance of what behaviour is appropriate and inappropriate, the perception of a Chinese teacher of a Wester child is a factor that will bias their judgements. Although these studies claim that they have found evidence of cultural differences in ADHD diagnosis, they have not controlled for the cultural bias of the rating targets. Therefore, a rating target without cultural bias is important to investigate the teachers’ rating differences between the two countries. This research project asks; “To what extent does culture affect the diagnosis of ADHD, and if it does, what are its effects in a setting that controls for the cultural bias of rating targets.”

Research Design

This study aims to find out whether there is a difference between British teachers and Chinese teachers in expectations and tolerance of ADHD symptoms by limiting the cultural bias of the rating objects. To investigate the difference, six cartoons have been developed representing animated classroom behaviours from six ADHD symptoms of DSM-5 (APA, 2013).

- Can’t wait (Often has difficulty waiting their turn)
- Fidgety (Often fidgets with or taps hands and feet, or squirms in the seat)
- Inattentive (Often has difficulty sustaining attention in tasks or activities)
- Disorganised (Often has difficulty organising tasks and activities)
- Distracted (Is easily distracted by extraneous stimuli)

- Disruptive (Often interrupts or intrudes on others)

Each cartoon depicts five animated children (Child A, Child B, Child C, Child D and Child E) exhibiting five different classroom behaviours. The behaviours and cartoon contexts were designed from literature reviews of ADHD diagnostic criteria, classroom observations, and teacher interviews conducted in the UK and China. The cartoons were developed by a commercial cartoonist, following standard commercial cartoon development processes, including the design of characters and scenes, story scripts, storyboard, cartoon animation and iterative revision. In order to control for the cultural preference of the rating objects, the cartoon characters, contexts and scenes were designed without cultural references to either Eastern culture or Western culture. The cartoon characters are portrayed as 6 to 7 year-old children without gender references. In addition, the cartoons were designed without any dialogue, only background music. The cartoons can be used therefore without concerns regarding language barriers.

Teachers of 6 to 7 year-old children in both countries were asked to watch the six cartoons and rate the children's behaviours in the cartoons on a symmetrical scale indicating the teachers' tolerance of these behaviours. Meanwhile, every teacher was asked to rate 10 children selected at random from the teacher's own class. The rating scale required participants to rate children's classroom behaviour according to severity on a 0 to 4 point scale related to the frequency of the specific behaviour (Never=9, Occasionally=1, Often=2, Very Often=3 and Almost Always=4) on the six ADHD symptoms.

The data will be analysed using the Rasch model (Rasch, 1960) to investigate the reliability and validity of the measurements, and to determine whether there are differences in this sample between UK and Chinese teacher's ratings of animated ADHD symptoms. SPSS, Winsteps and Facets software will be used to analyse the data and identify any differences in ratings between the two groups of teachers.

Conclusion

This study aims to identify and quantify the effects of cultural differences on ADHD diagnosis. By controlling for the cultural bias of rating targets, this study will be less subject to culture specific confounding factors than previous research. By using the Rasch model (Rasch, 1960), this study will not only identify the differences between the two groups of ratings statistically, but, in addition, quantify individual differences on an interval scale. Using this method, a profile of teachers' expectations and tolerance of ADHD symptoms can be built appropriate to any cultural context, by developing different cartoons representing different ADHD symptoms in a wide range of contexts. These profiles will also enable the quantification of cultural differences in the rating of ADHD symptoms. Furthermore, the differences will in turn, help in understanding the root causes of differing ADHD prevalence worldwide.

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